

Ernæring ved alvorlige lungesykdommer



Sharad Pathak, PhD
Overlege, Lungeavdelingen
Rikshospitalet, OUS

Oversikt

- Bakgrunn
- Risikofaktorer
- Behandling



Bakgrunn

- Underernæring og lungesykdom:
 - ca 30-60 % av pas m/ KOLS
 - ca 30 % av pas m/ IPF
- Cachexia:
 - 5 % av pas m/ KOLS



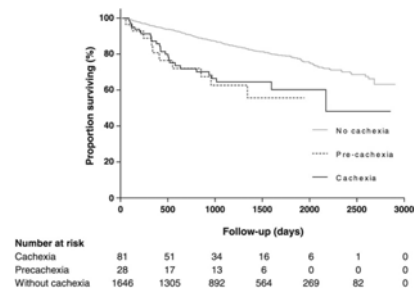
Bellini Lisa M. (2022). Malnutrition in advanced lung disease. In P. Dieffenbach (Ed.) *UpToDate*.
<https://www.uptodate.com/contents/malnutrition-in-advanced-lung-disease>

Bakgrunn

- Underernæring og muskelsvinn assosiert med
 - ↓ fysisk yteevne
 - ↑ sykkelighet
 - ↑ dødelighet
- Særlig hos KOLS pasienter
- også ved andre alvorlige lungesykdommer
 - f.eks. idiopatisk lungefibrose (IPF)



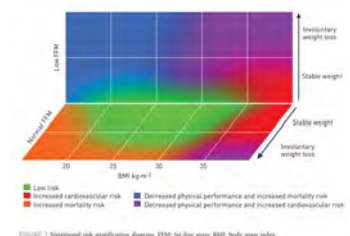
Undervekt er assosiert med redusert overlevelse ved KOLS



The prognostic significance of weight loss in chronic obstructive pulmonary disease-related cachexia: a prospective cohort study
Hoi Yee Kwan et al., J Cachexia Sarcopenia Muscle. 2019 Dec; 10(6): 1330-1338. Published online 2019 Jun 17. doi: 10.1002/jcsm.12463

Bakgrunn

Fedme gir også økt sykkelighet og dødelighet



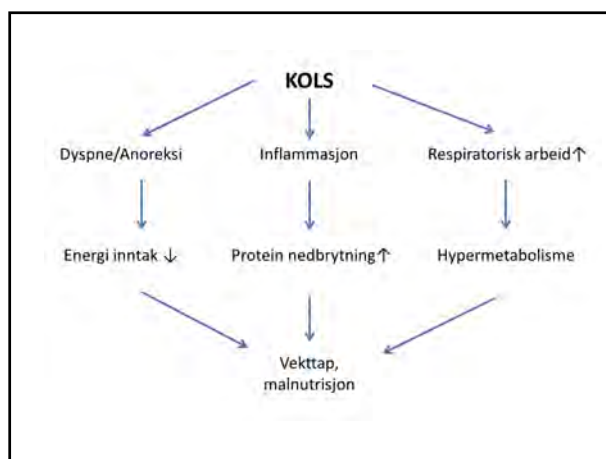
Metabolic phenotypes		
Metabolic phenotype	Definition	Clinical risk
Obesity	BMI ≥30 kg m ⁻²	Increased cardiovascular risk
Overweight	BMI ≥25 kg m ⁻²	Increased cardiovascular risk
Sarcopenic obesity	BMI 30-35 kg m ⁻² and SMI <2 to below mean of young M and F reference groups (2)	Increased physical performance
Sarcopenia	SMI <2 to below mean of young M and F reference groups	Increased mortality risk
Cachexia	Unintentional weight loss >10% in 6 months and FFM <15 kg m ⁻² SMI <10 kg m ⁻² (3)	Increased physical performance
Pre-cachexia	Unintentional weight loss >5% in 6 months	Increased mortality risk

BMI, body mass index (length/height²); SMI, appendicular skeletal muscle index (appendicular lean mass/height²); M, male; F, female; FFM, fat-free mass index (fat-free mass/height²).

Nutritional assessment and therapy in COPD: a European Respiratory Society statement, AM, Schols et al., Eur Respir J 2014; 44: 1504-1520

Flere risikofaktorer som bidrar

- Økt metabolisme / respirasjonsarbeid:
 - normal resp arbeid ca 2-5% av basal metabolisme (typisk ca 36- 72 cal /dag)
 - ved lungesykdom: øker energiforbruket til respirasjon opptil x 10
- Redusert mat inntak
- Økende alder → økt tap av muskelmasse → redusert treningskapasitet
- Hypoksi → perifer vevshypoksi (særlig muskler)
- Kronisk inflammasjon
- Medikamenter:
 - Glukokortikoider → katabole → hemmer proteinsyntese



Klinisk vurdering

- Vekttap ?
- Mistanke om pulmonal cachexia ?
 - Vekttap > 5 %
 - Vekt <90 % av ideal kroppsvekt
 - BMI ≤20



Behandling

Kan undervektige med lungesykdom oppnå vektøkning ved hjelp av energi- og næringstett kost og dermed også få bedre overlevelse ?



Conditions	Epidemiological study data	Effectiveness of intervention, primary prevention*	Effectiveness of intervention, secondary prevention*	Available recommendations
Allergy and asthma	Risk factors: low level of antioxidant, low vitamin D status, high ratio of omega-6 to omega-3 polyunsaturated fatty acids Protective factors: Mediterranean dietary pattern during childhood (aust conflicting results in adults)	NA	NA	No specific recommendations
COPD and chronic respiratory failure	Risk factors: related to 'Western', 'traditional' dietary patterns, cold meat Protective factors: fruit, vegetables and fibre	NA	Of three RCTs, one was positive for slowing the decline in FEV1. A meta-analysis (2012) showed a positive impact for oral supplementation on body composition and functioning in under-nourished patients with COPD.	WHO recommendations on chronic diseases (2009) AT/ERS guideline on pulmonary rehabilitation (updated 2013)
Lung cancer	Protective factors: fruit and vegetables	Two chemoprevention RCTs were negative for benefit, with higher risk in the β-carotene supplement arm; positive long-term prevention in subjects with high intake of fruit, vegetables and carotenoids	Negative results for nutritional support	No specific recommendations
Venous thromboembolism	Risk factor: high BMI	NA	NA	Obesity prevention in general population
Lung infections	Risk factors: low vitamin D status, under-nutrition	RCTs positive for vitamin D intake	RCTs positive for vitamin D intake	General recommendations for vitamin D intake
Cystic fibrosis	NA	NA	Positive cohort studies but no RCTs	Specific recommendations for nutritional support to prevent under-nutrition

Table 1 • Dietary risk factors, protective factors and interventions in respiratory diseases. COPD, chronic obstructive pulmonary disease; NA, not available; RCT, randomised controlled trial; RER, forced respiratory volume in l/minute; WHO, World Health Organization; AT/ERS, American Thoracic Society/ERS European Respiratory Society; BMI, body mass index. * Primary prevention is the prevention of a disease in healthy people; secondary prevention aims to halt or slow progression of a disease in people who already have the disease.

<https://www.erswhitebook.org/chapters/diet-and-nutrition/>

ESPEN Guidelines on Enteral Nutrition: Cardiology and Pulmonology

Summary of statements: Chronic obstructive pulmonary disease (COPD)		
Subject	Recommendations	Grade ⁶⁸
Indication	There is limited evidence that COPD patients profit from EN per se. EN in combination with exercise and anabolic pharmacotherapy has the potential to improve nutritional status and function.	B
Application	Frequent small amounts of oral nutritional supplements (ONS) are preferred to avoid postprandial dyspnoea and satiety and to improve compliance.	B
Type of formula	In stable COPD there is no additional advantage of disease specific low carbohydrate, high fat ONS compared to standard high protein or high energy ONS.	B

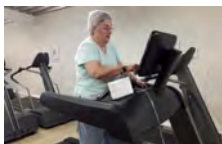
ONS=oral nutritional supplements

EN = enteral nutrition (include both ONS and tube feeding)

ESPEN Guidelines on Enteral Nutrition: Cardiology and Pulmonology, SD Anker et al., Clinical Nutrition (2006) 25, 311–318

Behandling - generelle tiltak

- Optimaliser lungefunksjon
- Beh inflammasjon
- Optimalisere O₂ tilbud til vev
 - NIV /langtids O₂ beh
 - korrigere anemi
 - optimalisere hjerte funksjon
- Regelmessig trening
- Anabole steroider ??
 - Kontroversiell
 - (Megestrol evt Oxandrolone)



Behandling - spesifikke kostholdstiltak

- Pasienter med KOLS kan med fordel være lett overvektige (BMI 25-26 kg/ m²)*
- Optimal kosttilskudd er ikke kjent
- Spis hyppige og små måltid, gjerne kaloritette med noe mer fett og protein (egg, fisk, mager kjøtt og nøtter)
- Bør spise frukt og grønnsaker
- Begrense trans- og omega-6 fettsyrer
- Praktiske råd:
 - Hvile før måltider
 - Enkel tilberedelse av maten



*Global strategy for the diagnosis, management, and prevention of chronic obstructive pulmonary disease: GOLD executive summary. KF Rabe et al., Am J Respir Crit Care Med 2007;176(6):532-55.

Oppsummering



- Undervekt er hyppig ved alvorlige lunge sykdommer.
- Både undervekt og fedme er forbundet med dårlig prognose.
- Begrenset evidence, men hos KOLS pasienter er det ønskelig med lett overvekt (BMI 25-26).

Takk for oppmerksomheten!

